

**CLAIMS**

- 5           1. An appliance for providing air and gas to a gas burner comprising a back tube for receiving air and gas to be combusted, said appliance comprising a gas tube and an air tube, said gas tube comprising an aperture for providing gas inwards to said air tube, said air tube comprising a first aperture for receiving said back tube of a gas burner, characterized in that said aperture of said gas tube is  
10           provided with a first part of a detachable connection device, for receiving a second part of said detachable connection device provided to said back tube for allowing gas from said gas tube to enter said back tube.
- 15           2. An appliance as in claim 1, wherein said aperture of said gas tube and said first aperture of said air tube being substantially aligned.
- 20           3. An appliance as in any one of the claims 1 to 2, wherein said detachable connection device is a quick connect coupling.
4. An appliance as in claim 3, wherein said first part of said quick connect coupling constitutes a male tubular organ for being received by a female sleeve from said second part of said quick connect coupling of said gas burner.
- 25           5. An appliance as in claim 4, wherein said male tubular organ has on its external peripheral surface at least one annular groove opened towards the exterior, said groove being adapted to receive an annular spring.

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- 5           6. An appliance as in claim 3, wherein said first part of said quick connect coupling constitutes a female sleeve for receiving a male tubular organ from said second part of said quick connect coupling of said gas burner.
- 10           7. An appliance as in claim 6, wherein said female sleeve has in its internal peripheral surface at least one annular groove opened towards its interior, said groove being adapted to receive an annular spring.
8. An appliance as in any one of the claims 1 to 7, wherein said gas tube being located inside said air tube.
- 15           9. An appliance as in any one of the claims 1 to 7, wherein said gas tube being located outside and adjacent to said air tube, said air tube comprising a second aperture for communicating with said aperture of said gas tube, said first part of a detachable connection device extending to the inside of said air tube.
- 20           10. An appliance as in any one of the claims 1 to 10, wherein said first part of a detachable connection device is provided with at least one sealing gasket for providing a gas-tight coupling between said first and said second part of a detachable connection device.
- 25           11. A gas burner for receiving air and gas to be combusted from an appliance as in any one of the claims 1 to 10, said gas burner comprising a radiant panel, said gas burner comprising a back tube for providing air and gas to said radiant panel, said back tube having

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an orifice for allowing air from said air tube to enter inside said back tube, characterized in that said back tube being provided with a second part of said detachable connecting device for receiving said first part of said detachable connection device present at said aperture of said gas tube.

12. A gas burner as in claim 11, wherein said second part of said detachable connection device being adapted to pass through said first opening of said air tube.

13. A gas burner as in any one of the claims 11 to 12, wherein said detachable connection device is a quick connect coupling.

14. A gas burner as in claim 13, wherein said second part of said quick connect coupling constitutes a male tubular organ for being received by a female sleeve of said first part of said quick connect coupling of said appliance.

15. A gas burner as in claim 14, wherein said male tubular organ has on its external peripheral surface at least one annular groove opened towards the exterior, said groove being adapted to receive an annular spring.

16. A gas burner as in any one of the claims 14 to 15, wherein said back tube having at its back end a male tubular organ, said male tubular organ comprising a piece of tube penetrating in the back of the back tube, said piece of tube constituting an injector organ for injecting gas into said back tube.

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17. A gas burner as in claim 16, wherein said orifice is provided at the level of said injector.
- 5 18. A gas burner as in claim 13, wherein said second part of said quick connect coupling constitutes a female sleeve for receiving a male tubular organ from said first part of said quick connect coupling of said appliance
- 10 19. A gas burner as in claim 18, wherein said female sleeve has in its internal peripheral surface at least one annular groove opened towards its interior, said groove being adapted to receive an annular spring.
- 15 20. A gas burner as in any one of the claims 11 to 19, wherein said second part of a detachable connection device is provided with at least one sealing gasket for providing a gas-tight coupling between said first and said second part of a detachable connection device.
- 20 21. A gas burner as in any one of the claims 11 to 20, said gas burner being an infrared radiant element.
- 25 22. A gas combustion device comprising an appliance for providing air and gas to a gas burner comprising a back tube for receiving air and gas to be combusted, said appliance comprising a gas tube and an air tube, said gas tube comprising an aperture for providing gas inwards to said air tube, said air tube comprising a first aperture for receiving said back tube of a gas burner, said gas combustion device comprising at least one gas burner, burner for receiving air and gas to be combusted from said appliance, said gas burner comprising a

radiant panel, said gas burner comprising a back tube for providing air and gas to said radiant panel, said back tube having an orifice for allowing air from said air tube to enter inside said back tube, characterized in that said aperture of said gas tube is provided with a first part of a detachable connection device, for receiving a second part of said detachable connection device provided to said back tube for allowing gas from said gas tube to enter said back tube.

23. A gas combustion device as in claim 22, wherein said aperture of said gas tube and said first aperture of said air tube being substantially aligned.

24. A gas combustion device as in any one of the claims 22 to 23, wherein said detachable connection device is a quick connect coupling.

25. A gas combustion device as in claim 24, wherein one of said parts of said quick connect coupling constitutes a male tubular organ, the other of said parts of said quick connect coupling constitutes a female sleeve, said male tubular organ being adapted for being received by said female sleeve.

26. A gas combustion device as in claim 25, wherein said second part of said quick connect coupling constitutes a male tubular organ.

27. A gas combustion device as in any one of the claims 25 to 26, wherein said back tube having at its back end a male tubular organ, said male tubular organ comprising a piece of tube penetrating in the

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back of the back tube, said piece of tube constituting an injector organ for injecting gas into said back tube.

5 28. A gas combustion device as in claim 27, wherein said orifice is provided at the level of said injector.

29. A gas combustion device as in any one of the claims 25 to 28, wherein said male tubular organ has on its external peripheral surface at least one annular groove opened towards the exterior, said  
10 groove being adapted to receive an annular spring.

30. A gas combustion device as in any one of the claims 25 to 29, wherein said female sleeve has in its internal peripheral surface at least one annular groove opened towards its interior, said groove  
15 being adapted to receive an annular spring.

31. A gas combustion device as in claim 30, said gas burner comprising an annular spring being received in said annular grooves of said male tubular organ and said female sleeve.  
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32. A gas combustion device as in any one of the claims 22 to 31, wherein said gas tube being located inside said air tube.

25 33. A gas combustion device as in any one of the claims 22 to 31, wherein said gas tube being located outside and adjacent to said air tube, said air tube comprising a second aperture for communicating with said aperture of said gas tube, said first part of a detachable connection device extending to the inside of said air tube.

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34. A gas combustion device as in any one of the claims 22 to 33,  
wherein said first part and/or said second part of a detachable  
connection device is provided with at least one sealing gasket for  
providing a gas-tight coupling between said first and said second part  
5 of a detachable connection device.

35. A gas combustion device as in any one of the claims 22 to 34,  
wherein said second part of said detachable connection device being  
adapted to pass through said first opening of said air tube.

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36. A gas combustion device as in any one of the claims 22 to 35,  
wherein said gas burner being an infrared radiant element.